



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,185	01/26/2004	Akiyoshi Tafuku	1083.1099	6510
21171 7590 06/21/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER CUNNINGHAM, GREGORY F	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/763,185	TAFUKU ET AL.	
	Examiner	Art Unit	
	Greg F. Cunningham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 4,5 and 7-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2624

DETAILED ACTION

1. This action is responsive to communications of application received 1/26/2004.
2. The disposition of the claims is as follows: claims 1 - 20 are pending in the application. Claims 1, 3, 6 and 15-20 are independent claims.
3. The group and/or Art Unit location of your application has changed. To aid in the correlation of any papers for this application, all further correspondence should be directed to Group Art Unit 2624 (effective 06/07). Please be sure to use the most current art unit number on all correspondence to help us route your case and respond to you in a timely fashion.
4. When making claim amendments, the applicant is encouraged to consider the references in their entireties, including those portions that have not been cited by the examiner and their equivalents as they may most broadly and appropriately apply to any particular anticipated claim amendments.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 15, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Kaneshiro Naoto, (JP 00137788), hereinafter Kaneshiro, and further in view of Kaneko Kazuma et al., (JP 06243367 A), hereinafter Kaneko.

Art Unit: 2624

A. Kaneshiro discloses claim 15, “A method for detecting orientation of a face from image data acquired by photographing the face [“A face candidate area considered to correspond to the face of the human is extracted from an image to be processed, the face candidate area is divided into a specific number of blocks (division patterns are shown by broken lines in (A))”], the image data being composed of a plurality of pixel data aligned in horizontal direction and vertical direction, respectively, comprising:

adding the respective pixel data in the vertical direction of the image data [“integral values of edge intensity in the top-bottom direction of the image are found, block by block.”, wherein blocks correspond to pixels]; and

detecting a face orientation based on a plurality of sum values calculated [The feature quantities found for each block are collated with patterns for matching (cf. (B)) found by dividing the face area actually corresponding to the face of the human according to the division patterns and calculating edge intensity integral values for each block to evaluate the accuracy of the face candidate area as an area (face area) corresponding to the face of the human.”]” supra [as detailed].

While Kaneshiro only discloses orientation of face in terms of [“feature qualities found for each block are collated with patterns for matching ... the face of a human”], Kaneko moreover discloses [“monitors the direction of the face or the sight of the vehicle driver 1.”, whereby corresponds with face orientation.]

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply face feature qualities using block-by-block top-down direction collated with patterns for matching as disclosed by Kaneshiro in combination with monitors the

Art Unit: 2624

direction of the face disclosed by Kaneko, and motivated to combine the teachings because it would extract an area corresponding to the face of a human through an easy process according to the internal structure of the face as revealed by Kaneshiro in abstract.

B. Per independent claims 1 and 18, these are directed to an apparatus and computer memory product, respectively, for performing the method of independent claim 15, and therefore are rejected to independent claim 15.

C. Claim 16 is also rejected since it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Kaneshiro and Kaneko directed to a left-to-right, right-to-left, or horizontal direction for human face extraction and orientation.

D. Per independent claims 3 and 19, these are directed to an apparatus and computer memory product, respectively, for performing the method of independent claim 16, and therefore are rejected to independent claim 16.

7. Claims 6, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Kaneshiro Naoto, (JP 00137788), hereinafter Kaneshiro, further in view of Kaneko Kazuma et al., (JP 06243367 A), hereinafter Kaneko, and further in view of Kang et al., (US 6,611,613 A), hereinafter Kang.

A. Kaneshiro and Kaneko disclose claim 6, "An apparatus for detecting orientation of a face from image data acquired by photographing the face, the image data being composed of a plurality of pixel data aligned in horizontal direction and vertical direction, respectively, comprising:

a region detecting section for detecting a face region in the horizontal direction from the image data;

Art Unit: 2624

a nose detecting section for detecting a nose position in the horizontal direction from the image data; and

an orientation detecting section for detecting a face orientation based on the nose position detected by said nose detecting section and the region detected by said region detecting section” supra [as detailed].

However, Kaneshiro and Kaneko do not appear to disclose “a nose detecting section for detecting a nose position in the horizontal direction from the image data [Kang – col. 2, ln. 54 – col. 3, ln. 34, corresponding with ‘pixels within area of a search template, and horizontal edge sizes calculated in the left and right eyes, mouth and a nose estimated by the search template, and an extraction position stabilization means for forming a minimum boundary rectangle by the optimum search template, and increasing count values corresponding to the minimum boundary rectangle area and reducing count values corresponding to an area other than the minimum boundary rectangle area, among count values of individual pixels, stored in a shape memory, to output the area in which count values above a predetermined value are positioned, as eye and face areas’ .]; and

an orientation detecting section for detecting a face orientation based on the nose position detected by said nose detecting section and the region detected by said region detecting section [Kang – col. 2, ln. 54 – col. 3, ln. 34, corresponding with ‘pixels within area of a search template, and horizontal edge sizes calculated in the left and right eyes, mouth and a nose estimated by the search template, and an extraction position stabilization means for forming a minimum boundary rectangle by the optimum search template, and increasing count values corresponding to the minimum boundary rectangle area and reducing count values corresponding to an area other than

Art Unit: 2624

the minimum boundary rectangle area, among count values of individual pixels, stored in a shape memory, to output the area in which count values above a predetermined value are positioned, as eye and face areas'.]”, but Kang does [Kang – as detailed].

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply face feature qualities using block-by-block top-down direction collated with patterns for matching as disclosed by Kaneshiro in combination with monitors the direction of the face disclosed by Kaneko, and motivated to combine the teachings because it would extract an area corresponding to the face of a human through an easy process according to the internal structure of the face as revealed by Kaneshiro in abstract, and further coupled with nose search disclosed by Kang and motivated to couple the teachings because it would provide a method of accurately and quickly detecting a speaking person's eye and face as disclosed by Kang in col. 2, lns. 51-53.

B. Per independent claims 17 and 20, these are directed to a method and computer memory product, respectively, for the apparatus of independent claim 6, and therefore are rejected to independent claim 6.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over, Kaneshiro Naoto, (JP 00137788), hereinafter Kaneshiro, further in view of Kaneko Kazuma et al., (JP 06243367 A), hereinafter Kaneko, and further in view of Murata, (JP 06333023 A).

A. Kaneshiro and Kaneko disclose claim 2, “The face orientation detection apparatus of claim 1, further comprising:

an extracting section for extracting characteristic data of a plurality of sum values calculated by said vertical adding section; and

Art Unit: 2624

a characteristic table storing the characteristic data in association with a plurality of face orientations, wherein said orientation detecting section selects, from said characteristic table, a face orientation corresponding to the characteristic data extracted by said extracting section” supra for claim 1.

However, Kaneshiro and Kaneko do not appear to disclose “a characteristic table storing the characteristic data in association with a plurality of face orientations, wherein said orientation detecting section selects, from said characteristic table, a face orientation corresponding to the characteristic data extracted by said extracting section”, but Murata does in constitution and Figs. 16 (a) – (d).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply face feature qualities using block-by-block top-down direction collated with patterns for matching as disclosed by Kaneshiro in combination with monitors the direction of the face disclosed by Kaneko, and motivated to combine the teachings because it would extract an area corresponding to the face of a human through an easy process according to the internal structure of the face as revealed by Kaneshiro in abstract, and coupled with storing in a table as disclosed by Murata and motivated to combine because it would provide for easily presume an age objectively based on a produced face image as disclosed by Murata in constitution.

Allowable Subject Matter

9. Claims 4, 5 and 7-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2624

Responses

10. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Inquiries

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory F. Cunningham whose telephone number is (571) 272-7784.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on (571) 272-7778. The Central FAX Number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

G. F. Cunningham

Gregory F. Cunningham
Examiner, Art Unit 2624

Matthew C. Bella

gfc

6/14/2007

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600